

Mr. Power near Blakeney, on the 11th of September last. He informs me that he shot it from a thick clump of thistles along the Cley sea-wall. No other bird was near it, although he had observed a great arrival of Wheatears, Redstarts, and one Bluethroat that afternoon, all coming direct from the north, the wind being east-north-east. As will be seen, this bird was much damaged by the shot, indeed so much so that the sex was indistinguishable. This is the third occurrence of this species in Great Britain on record.

Mr. W. B. Tegetmeier, F.Z.S., exhibited a specimen of the File-fish (*Balistes caprisus*) recently caught off Folkestone.

A paper was read by Mr. F. E. Beddard on the anatomy and systematic position of a gigantic Earthworm from the Cape Colony, proposed to be called *Microchaeta rappi*.

This paper will be published entire in the Society's 'Transactions.'

The following papers were read :—

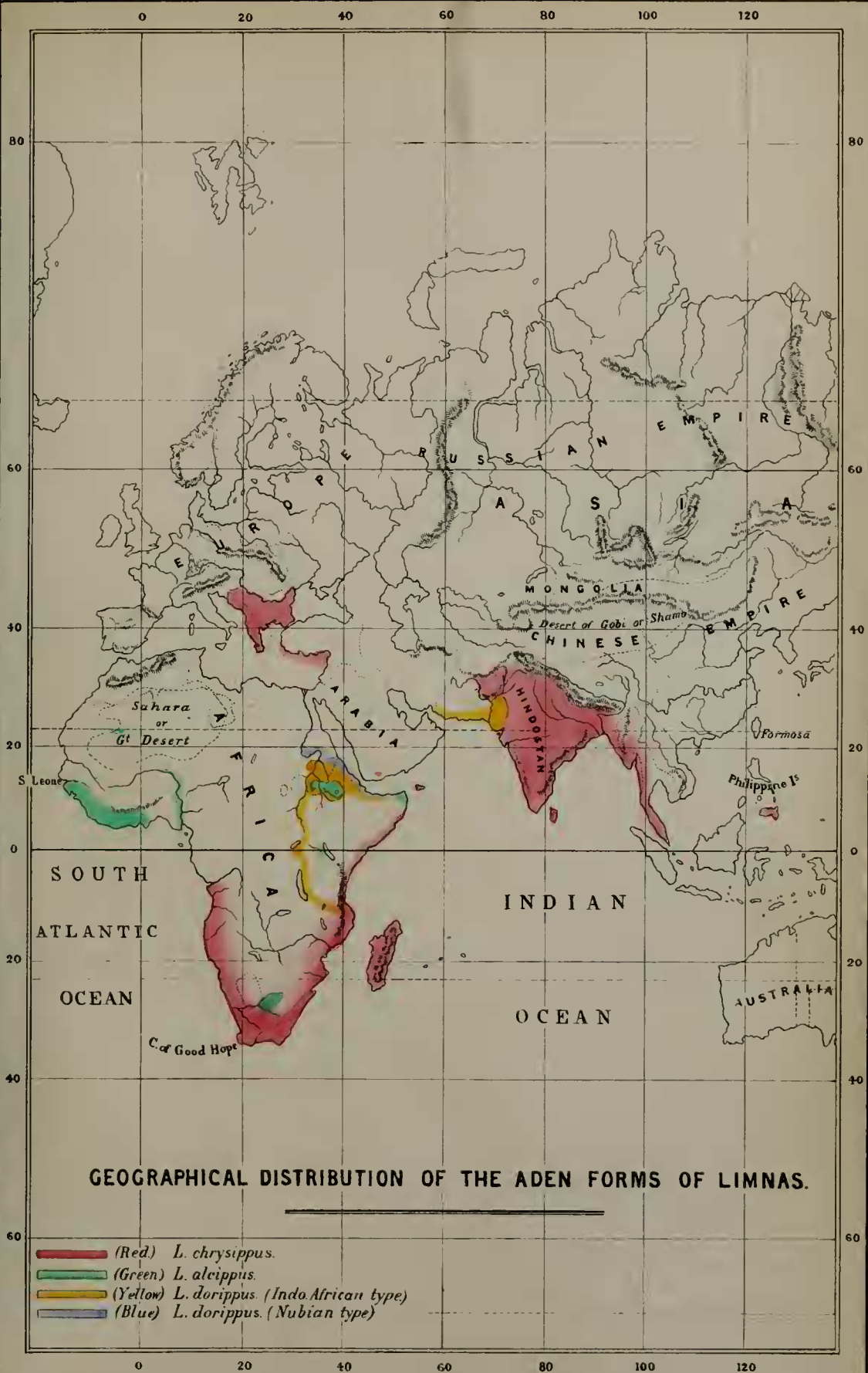
1. On a Collection of Lepidoptera made by Major J. W. Yerbury at or near Aden. By ARTHUR G. BUTLER, F.L.S., F.Z.S., &c.

[Received September 30, 1884.]

(Plate XLVI.)

The collection of which this is an account is one of the greatest interest, since it not only contains fine series of the beautiful species of *Teracolus* recently described by Col. Swinhoe, but also many remarkable intergrades between certain long-established species, tending to prove either that hybrids between allied species are fertile (which I believe is rarely the case), or that in Aden a condition of things still exists which in Asia proper and in Africa has long passed away. Thus in the *Euplocinæ* we find *Limnas chrysippus* gradually passing into *L. alcippus* and freely intermarrying with the Indo-African and Lower-Nubian types of *L. dorippus*; yet, as the range of these forms does not by any means correspond, they are practically distinct (see chart, Pl. XLVI.). Even in Africa, where *L. chrysippus* has a wide range, it does not appear to coexist with *L. alcippus*: it is true that the range of the latter species can be but imperfectly traced; thus, in the Museum series we only have it from Sierra Leone to Ashanti, and in Mr. Godman's collection¹ it occurs here and there at wide intervals over great part of Africa, but does not extend further south than the Orange River (Mr. Godman's localities are Sierra Leone, Cape Coast Castle, Winnebah, Senegal, Lower Niger, Sennaar, Abyssinia, and Kimberley). The existence of a *Hypolimnas*,

¹ I here desire to express my thanks to Mr. Godman for examining the whole of his specimens and forwarding to me a list of their localities.





modified in imitation of *L. alcippus*, and occurring at the Victoria Nyanza, further indicates that the species exists or formerly did exist there. On the other hand, we have received *L. chrysippus* from South, South-west, and Eastern Africa, the Mascarene and Comoro islands, and the island of Socotra; but nowhere have we known it to occur together with *L. alcippus*; the latter species is indeed omitted from Mr. Trimen's 'Rhopalocera Africæ Australis' and from other works on the Butterflies of South Africa.

Judging from its present distribution, it would seem likely that *L. alcippus* had formerly extended from the Somali Coast through Abyssinia almost in a straight line to the Gold Coast, and that southwards its range had passed from Cape Gardafui through the interior to the Nyanza, and thence, still avoiding the coast, had continued downwards to the Orange River; whether this represents its present distribution cannot at present be decided owing to our meagre knowledge of the Lepidopterous fauna of Africa.

In Asia *L. chrysippus* occurs commonly from Turkey, through Persia, Afghanistan and India, to the Philippines, but is not accompanied by *L. alcippus*. On the other hand, a very similar form, *L. alcippoides*, has been described by Mr. Moore as occurring in India, and is the *L. alcippus* of Marshall and De Nicéville's 'Butterflies of India,' of which these authors say:—"Its appearance is so erratic over a large extent of country that in distribution as well as in inconstancy of the extent of white, the idea of its being only a casual variety of *L. chrysippus* is suggested." The type, from Nepal, in Mr. Moore's collection, is paler than *L. alcippus*, and the secondaries, instead of being pure white, are tinted with fulvous; and looking to this fact, together with the paucity of specimens taken (probably eight or ten in all, so far as I can gather from the 'Butterflies of India'), their coexistence with abundance of *L. chrysippus*¹, and the probability that an ancestral form would sometimes occur where the entire difference was one of colour, I should have no hesitation in regarding *L. alcippoides* as a case of reversion. In Col. Swinhoe's collection there are four of these modified forms of *L. chrysippus*, one with white veins from Bombay, one from Mhow, one from Kurrachee, and one from Deesa, the last three of the *L. alcippoides* type; he may have other examples unset. On the other hand, I believe that the tetramorphic type found at Aden represents *L. chrysippus* in its ancestral character, probably preserved through the immigration from time to time of the African forms which occur on the Somali Coast.

Two of the four forms of *Limnas* have been received from the Somali Coast, a third is in Mr. Godman's collection from Cape Gardafui, and the fourth is in the Museum collection from Socotra; all four are therefore in the neighbourhood. Moreover many Butterflies have been known to fly greater distances, and only recently I was informed incidentally by the Hon. H. S. Thomas, of the Indian Civil Service, that he had "frequently seen quite small species of

¹ M. de Nicéville informed me that this was the case.

butterflies crossing the Red Sea in the very teeth of a strong wind." There would therefore be nothing very extraordinary in the flight of some of the larger species across the Strait of Bab-el-Mandeb, more especially if the wind chanced to be in their favour.

Lest there should be any doubt in the minds of Lepidopterists as to the specific identity of the four forms of Aden, I quote here Major Yerbury's note on the species:—"I have taken *dorippus* and *chrysippus* 'in coitu' so often that I have given up catching them as a curiosity: I have raised caterpillars feeding on plant no. 41¹; there seemed no difference between the caterpillars which turned to *chrysippus* and those that turned to *dorippus*. The chrysalides were of two colours—green with gold spots, and light waxy purple with ditto."—J. W. Y.

From notes attached to the specimens, it would appear that the green chrysalis produced the Indo-African form of *L. dorippus* and the purplish chrysalis *L. chrysippus* and intergrades towards *L. alcippus*. It is a singular fact if there really is not even a slight difference between the larvæ of the various forms.

The question now arises as to what the systematist is to do with these four forms, since they are (so far as is known) good species everywhere, excepting at Aden. If we apply to them trinomial appellations, calling one *Limnas chrysippus alcippus*, another *Limnas chrysippus dorippus*, and so on, we declare that they are local races of one species; and yet as a matter of fact they both are and are not. Again, supposing the trinomial system to be generally adopted for local races, though it would practically (if not always immediately) reduce every genus of Lepidoptera to a single species, and eventually as links continued to turn up (so as to necessitate the union of nearly allied genera) might lead back the lepidopterist by a process of retrogression to the first described butterfly, nevertheless, though all these evils might spring from the adoption of this system, *Limnas chrysippus* and one or two other Aden butterflies could not be embraced by it, because at Aden their forms are not local but mere polymorphic sports, or in a word true varieties.

In the present paper I shall keep the various named forms separate, though under one number, the first as a matter of convenience, to enable me to record the exact place and date of capture, the second to indicate that at Aden they are not distinct species.

RHOPALOCERA.

NYMPHALIDÆ.

EUPLEINÆ.

1. LIMNAS CHRYSIPPUS.

Papilio chrysippus, Linnæus, Mus. Lud. Ulr. p. 263 (1764).

One typical female, Aden, 26th February, 1883.

Taken *in coitu* with Indo-African type of *L. dorippus*.

¹ I cannot get the name of this plant.

Intergrade *a*.—Secondaries with the median veins white-bordered, the abdominal area partly white.

♂, Aden, 11th April, 1884; Huswah, 18th May.

Intergrade *b*.—Secondaries with the basal half of the median interspaces and the borders of the male sexual spot white.

♂, Huswah, 2nd March, 1884.

Intergrade *c*.—Secondaries with the basal three-fourths of the abdominal border, the centre of the interno-median area, and the basal half of the median interspaces white or whitish.

♂, Huswah, 2nd March, 1884.

1 *a*. LIMNAS ALCIPPUS.

Papilio alcippus, Cramer, Pap. Exot. ii. pl. cxxvii. E, F (1779).

♂, Haithalkim, 5th April, 1884.

Slightly modified by interbreeding with *L. chrysippus*.

1 *b*. LIMNAS DORIPPUS.

Euplœa dorippus, Klug, Symb. Phys. pl. 48. figs. 1–4 (1845).

♂ ♀, Huswah, 2nd March, 1884; ♂, Aden, 28th January and 6th March; ♀ *in coitu* with Indo-African type, 29th February.

1 *c*. LIMNAS, sp. (unnamed Indo-African type)¹.

Euplœa dorippus, var., Klug, Symb. Phys. pl. 48. fig. 5, ♂ (1845).

♂, Aden, 12th February, 1884; ♂, *in coitu* with typical *L. chrysippus*, 26th February; ♂, *in coitu* with typical *L. dorippus*, 29th February.

SATYRINÆ.

2. YPTHEMA ASTEROPE.

Hipparchia asterope, Klug, Symb. Phys. pl. 29. figs. 11–14 (1832).

Aden, 10th and 19th March; Lahej, 3rd, 4th, and 6th April; Shaik Othman, 20th April, 1884.

The specimens vary considerably in size, but the ocelli upon the wings are more uniform than is usual in this genus.

Major Yerbury notes *Melanitis ismene* as common at Lahej, though he failed to catch one; it is only occasionally seen in Aden.

NYMPHALINÆ.

3. HYPOLIMNAS MISIPPUS.

Papilio misippus, Linnæus, Mus. Lud. Ulr. p. 264 (1764).

♀, Aden, 26th February, 1884.

“The females of this butterfly mimic all the forms of *Danainæ*;

¹ Although this form appears to be a distinct species when occurring in Sind, Nyassa, Abyssinia, and Arabia, it is only a variety at Aden, and therefore I do not in this place give it a distinctive name.

the mimics of *dorippus* with white and *alcippus* are rather rarer than the other types."—*J. W. Y.*

As might be expected, this copy of *Limnas chrysippus* is very inconstant in coloration at Aden; a specimen taken on the 27th March has lost the black apical patch, and the white subapical band is replaced by a pale tawny band (*L. inaria*, Cramer), so that this insect more nearly resembles the Indo-African type of *L. dorippus*; furthermore Col. Swinhoe confirms Major Yerbury's note to the effect that some females have white on the secondaries like *L. alcippus*, and thus would agree with my *H. alcippoides* from the Victoria Nyanza. An instance of this kind points without question to some relationship between the females of *H. misippus* and the *Limnas* which they copy, and is a sufficient answer to those who dispute the existence of protective assimilation.

4. JUNONIA HERE.

Junonia here, Lang, Entomologist, p. 206 (Sept. 1884).

♂, Haithalkim, 4th April, 1884.

This species, which we have also from Bagdad, has long been confounded with *J. orithyia* of China. It, however, is constantly smaller, with the primaries blacker; the discoidal spots blue instead of scarlet; the external blue area transverse and with a sharply defined straight inner edge; the white band of the primaries is narrow, and the posterior ocellus little more than a black patch; the anterior ocellus of the secondaries is also represented by a large rounded black spot; the external border greenish-grey; on the under surface the apical area of the primaries and the whole of the secondaries are of a whitish stone-colour with darker and paler markings, but the secondaries correspond with those of true *J. orithyia* in the absence of distinct ocelli.

5. JUNONIA CLELIA.

Papilio clelia, Cramer, Pap. Exot. i. pl. xxi. E, F (1775).

♂, Huswah, 24th June, 1883.

6. JUNONIA CEBRENE.

Junonia cebrene, Trimen, Trans. Ent. Soc. 1870, p. 353.

♂ ♀, Aden, 10th October, 1883.

Mr. Kirby quotes "*J. crebrene*," Butler, as a synonym of this species. As, however, my paper was read and ordered for publication before my friend Trimen's was received by the Entomological Society, as the Secretary also altered the name which I had proposed and, *without consulting me*, gave Trimen's paper precedence in the volume, either the species should be quoted as mine, or the synonym *J. crebrene* (sic) ascribed to the person from whose pen it emanated; I should prefer the latter course.

The occurrence of *Pyrameis cardui* is noted by Major Yerbury.

7. *HYPANIS ILITHYIA*.

Papilio ilithyia, Drury, Ill. Exot. Ent. ii. pl. 17. figs. 1, 2 (1773).

♂, Huswah, 24th June, 1883.

¹ "Common at Haithalkim in March 1883; none to be found early in April 1884."—*J. W. Y.*

LYCÆNIDÆ.

8. *POLYOMMATUS BÆTICUS*.

Papilio bæticus, Linnæus, Syst. Nat. i. 2. p. 789, n. 226 (1767).

♀, Shaik Othman, 18th January; ♂, Aden, 8th January;
♂ ♀, 4th February; ♀, 27th March, 1884.

"Generally distributed."—*J. W. Y.*

9. *CATOCHRYSOPS ASOPUS*.

Lycæna asopus, Hopffer, Ber. Verh. Ak. Berl. 1855, p. 642, n. 22; Peters' Reise nach Mosambique, Zool. v. p. 410, pl. 26. figs. 13-15 (1862).

Three females, Aden (without date).

10. *AZANUS AMARAH*.

Polyommatus amarah, Lefebvre, Voy. Abyss. vi. p. 384, pl. 11. figs. 5, 6 (1847).

Aden, 5th January, 18th February, 15th April; Shaik Othman, 15th January, 20th April, 1884.

Occurs also at Huswah according to Major Yerbury.

11. *AZANUS ZENA*.

Lycæna zena, Moore, P. Z. S. 1865, p. 505, pl. xxxi. fig. 9.

Huswah, 2nd March and 9th September; Aden, 7th March, 20th June, 5th September, and 8th November, 1883.

"Generally distributed."

We have specimens of this species received by Mr. Moore from Kutch; it occurs also at Kurrachee, and, on account of its affinity to *A. ubaldus*, has been recorded under the latter name.

Col. Swinhoe has specimens of the allied Abyssinian species *A. sigillata* collected at Aden in January and February.

12. *TARUCUS PULCHER*.

Lycæna pulchra, Murray, Trans. Ent. Soc. 1874, p. 524, pl. 10. figs. 7, 8.

♂ ♀, Aden, 18th and 29th February, 4th March; Lahej, 3rd April; Huswah, 2nd and 14th March, 1884.

¹ In his notes on Aden Butterflies Major Yerbury refers to two species. I only found one specimen (from Huswah) among his Aden specimens, and the note to this states that it is the only one ever seen; the specimens from Haithalkim are probably the same, however.

13. *TARUCUS THEOPHRASTUS*.

Hesperia theophrastus, Fabricius, Ent. Syst. iii. 1, p. 281, n. 32 (1793).

Lycæna theophrastus, Lucas, Expl. Alg., Zool. iii. pl. 1. fig. 6 (1849).

♂ ♀, Lahej, 3rd April, 1883.

Occurs also at Huswah according to Major Yerbury.

M. Lucas's figure is not very characteristic. The species may readily be distinguished from *T. nara* of India by the break in the submarginal series of spots on the under surface of the secondaries, the spots towards the costa forming a line with those beyond the cell.

14. *ZIZERA TROCHILUS*.

Lycæna trochilus, Freyer, Neuere Beitr. v. pl. 440. fig. 1 (1844).

Lycæna parva, Murray, Trans. Ent. Soc. 1874, p. 526, pl. 10. fig. 1.

Aden, 14th January ; 3rd, 6th, and 18th February ; 6th, 12th, and 19th March ; Huswah, 2nd March ; Lahej, 3rd April, 1884.

The characters upon which Mr. Murray relied for the separation of his *L. parva* from *Zizera trochilus* are not only slight but not constant :—" Its much smaller size, and also from its presenting in both wings a series of white markings immediately beyond the discal row of spots." In the eleven Aden specimens before me the size varies from 17 to 24 millimetres in expanse, the smallest specimen therefore agreeing with Mr. Murray's type, and the largest exceeding by 4 millim. the largest of our other examples of *Z. trochilus* ; the white markings also (which are only expansions of the white borders to the ordinary spots) fail, or, more strictly speaking, correspond with those of *Z. trochilus*, in two specimens from the Transvaal in the Museum collection.

15. *ZIZERA KNYSNA*.

Lycæna knysna, Trimen, Trans. Ent. Soc. ser. 3, vol. i. p. 282 (1862).

Shaik Othman, 18th January, 9th March ; Huswah, 2nd April ; Lahej, 3rd April, 1884.

As a rule slightly larger than specimens from South Africa, but exactly corresponding in every other respect ; one example taken at Shaik Othman on the 20th April is somewhat aberrant, being small even for typical *Z. knysna*, and with the under surface as white in tint as that of *Z. pygmaea*.

16. *ZIZERA GAIKA*.

Lycæna gaika, Trimen, Trans. Ent. Soc. ser. 3, vol. i. p. 403 (1862).

Aden, 4th February, 6th and 12th March ; Haithalkim, 4th April, 1884.

The specimens correspond in all respects with those from South Africa.

17. *DEUDORYX LIVIA*.

Lycaena livia, Klug, Symb. Phys. pl. 40. figs. 3-6 (1834).

Aden, 25th December, 1883; 5th, 6th, and 20th January, and 17th February, 1884.

The female of this species (of which Klug figures two males) closely resembles the *Dipsas antalus* of Hopffer, two females of which are evidently represented as sexes.

PAPILIONIDÆ.

18. *TERIAS CHALCOMIÆTA*.

Terias chalconiæta, Butler, Ann. & Mag. Nat. Hist. ser. 5, vol. iii. p. 190, n. 10 (1879).

Lahej, 3rd and 6th April; Haithalkim, 4th April, 1884.

The seven examples forwarded by Major Yerbury are separated by him under four different numbers, probably on account of their difference of size and the more or less pronounced character of the markings on the under surface; in some specimens these are as sharply defined as in *T. æsiope*, whilst others agree with the type from Johanna in almost every particular.

The *Catopsilæ* of the collection appear to repeat, to a certain extent, the peculiarities of the forms of *Limnas*, since they are undoubtedly connected by intergrades in such a manner as to render their separation very difficult.

When I published my Monograph of *Callidryades*, I recognized two African types, *Catopsilia pyrene* and *C. florella*, which, at the time, were believed by Mr. Trimen to be dimorphic forms of one species; this belief was based upon the capture of a supposed *C. pyrene* ♂ in coitu with a *C. florella* ♀: his words are as follows:—"On one occasion near Durban, Port Natal, I took a white ♂ and yellow ♀ in copula. Females of the paler colouring are certainly scarcer than the others; but Mr. Bowker writes that he has noticed them in Basuto-Land, and Mr. Hewitson possesses one from Madagascar, which resembles the yellowish-white specimen from Bourbon, figured in M. Maillard's 'Notes sur l'Ile de la Réunion (Bourbon),' published in 1862."

The pale female in Mr. Hewitson's collection is my *C. rufo-sparsa*, and differs from *C. florella* not only in its pale colouring, but in the total absence of the angular subapical series of spots on the primaries, the shorter secondaries, the ochreous instead of chrome-yellow colouring of the under surface, the denser and less striate character of the reticulate markings, and the suffused ill-defined character of the discal series of spots.

In a collection received some years since from Abyssinia were great numbers of a *Catopsilia* which I took to be *C. florella*, and one of these I selected for the sake of its locality. On setting it, however, I found it so distinct—the central area of the wings being occupied by a broad white belt, and the under surface of the secondaries showing only one instead of three silver spots—that I concluded to describe it as a new species under the name of *C. aleurona*.

In Aden the *Catopsiliae* appear to be very common, thirty-nine specimens being in the present collection. The females separate readily into four types; but as regards the males I agree with Major Yerbury in admitting that "I have found it very difficult to separate the different *Catopsiliae*." They have, however, enlightened me upon one point, which is, that the males of *C. pyrene* and *C. florella* (as in many other species of *Callidryas*) are extremely similar, whilst the females are entirely different; that, consequently, Boisduval was in error as to the male of the latter species, whilst my friend Trimen was partly right and partly wrong. The male of *C. florella* is indeed white and very like that sex of *C. pyrene*; but I have little doubt of its distinctness from that species in Tropical Africa, though in Aden I have every reason to believe that *C. pyrene*, *C. aleurona*, and *C. florella* are one species; this opinion I base not only upon the fact that all fly together (for that is not conclusive evidence of identity), but from the existence in Aden of a fourth form between *C. pyrene* and *C. aleurona* and perfectly intermediate on both surfaces. This intergrade, which I believe to be M. Boisduval's *C. hyblæa* described from a Senegalese specimen, resembles *C. rufo-sparsa* of Madagascar and *C. gnoma* of India on the upper surface, but on the under surface is only a little yellower than *C. pyrene*, with similar greyish reticulations and barely a trace of the discal series of spots.

If in Tropical Africa *C. florella* were merely a dimorphic form of the female of *C. pyrene*, as Mr. Trimen clearly supposed it to be, there is no reason why intergrades between the females should not occur commonly with them there, as at Aden; yet this is not the case. On the other hand, admitting the distinctness of the two species in Southern and Western Africa, the fact that they are one species in Aden can be explained by the not improbable supposition that the Abyssinian type has steadily migrated in that direction, and, being almost exactly intermediate between the two, has rendered the preservation of a tetramorphic species possible in this case as in that of *Limnas chrysippus*; nor in my opinion is such a supposition at all fanciful in the case of genera which are notorious for the possession of a strong migratory instinct.

In the present paper I must necessarily treat the forms of *Catopsilia* as I have done those of *Limnas*.

19. CATOPSILIA FLORELLA.

♀ *Papilio florella*, Fabricius, Syst. Ent. p. 479, n. 159 (1775).
Callidryas (Catopsilia) florella, Butler, Monogr. in Lep. Exot. p. 56, pl. xxii. figs. 1, 2, 2 a (1871).

♂, Aden, 26th February, 1883; ♀, 27th March, ♂, 14th April, 1884; ♂, Lahej, 3rd April, 1884.

The males are larger than those of *C. pyrene*, have the primaries more produced, with incurved outer margin rather distinctly spotted with smoky grey; on the under surface also the angular discal subapical streak is tolerably distinct.

19 a. CATOPSILIA ALEURONA.

♀ *Catopsilia aleurona*, Butler, Ann. & Mag. Nat. Hist. ser. 4, vol. xviii. p. 489 (1876).

♂, Aden, 4th and 23rd February and 10th March; ♀, 15th April; ♂, Shaik Othman, 9th March; ♀, Lahej, 6th April, 1884.

The males barely show a trace of marginal spotting on the upper surface, and are slightly paler on the under surface than in *C. florella*; at the same time there is so much similarity between them that, unless taken *in copulâ* in Abyssinia, it would be impossible to assert that no taint of *C. florella* had modified the normal characteristics of the race¹.

19 b. CATOPSILIA HYBLÆA.

♀ *Callidryas hyblæa*, Boisduval, Sp. Gén. Léop. p. 612, n. 11 (1836).

♂, 6th January, 23rd February, 8th March; ♀, 12th March; ♂, 21st March.

Nine males and three females received; both sexes are smaller than in *C. aleurona*, of a paler greenish-sulphur tint below, with the markings, excepting the small ocellated spots, very ill-defined.

19 c. CATOPSILIA PYRENE.

♂ ♀, *Colias pyrene*, Swainson, Zool. Ill. 1st ser. pl. 51 (1820-1).

♂, Aden, 21st and 27th March; ♀, 12th March; ♀, Lahej, 3rd April; ♂ ♀ (*in coitu*), 4th and 6th April; ♂, 10th April; Shaik Othman, 20th April.

20. TERACOLUS CALAIS.

Papilio calais, Cramer, Pap. Exot. i. pl. 53. figs. C, D (1779).

Aden, 5th, 14th, 22nd, and 28th January; 10th April, 1884; 10th and 14th October, 1883.

21. TERACOLUS DYNAMENE.

Pontia dynamene, Klug, Symb. Phys. pl. 6. figs. 15, 16 (1829).

♂ ♀ *in coitu*, Aden, 15th February, 1884; ♂, 29th August, 1883.

The female taken *in coitu* is not distinguishable from that sex of *T. calais*, to which species it is, I should say, undoubtedly to be referred; the two species are perfectly distinct and readily separable, so that it is extremely unlikely that any fertile eggs would have been produced, or, at any rate, would have yielded healthy larvæ; if, however, hybrids were reared, they ought to resemble *T. carnifer* more than anything else.

¹ I must here remind Lepidopterists that whenever I speak of a species of Butterfly or Moth, I mean exactly what is understood in some of the other Orders by a local race; all "species" of Lepidoptera being, in my opinion, local races.

21 a. *TERACOLUS CARNIFER*.

Teracolus carnifer, Butler, P. Z. S. 1876, p. 138, n. 42, pl. vii. figs. 8, 9.

♂, Aden, 7th July, 1883.

This form was described upon specimens in Mr. Moore's collection from Mynpuri, N.W. Punjab; in the Museum we have a pair from Kurrachee, presented, along with specimens of *T. dynamene*, by Col. Swinhoe; now again a single male comes from Aden in company with *T. dynamene*. I think therefore that the distinctness of this form from the latter must be regarded as extremely doubtful, unless it can be shown by breeding that it is a different species. At the same time, the two forms are sufficiently dissimilar to leave the question of their specific identity an open one for the present.

22. *TERACOLUS PHISADIA*.

Pieris phisadia, Godart, Enc. Méth. ix. p. 132, n. 40 (1819).

Var. *Pontia arne*, Klug, Symb. Phys. pl. 7. figs. 1-4 (1829).

♂, Aden, 6th and 20th January; ♀, 27th March and 10th April, 1884; ♀, 6th July, 29th August; ♂, 1st September, 10th October; ♀, 14th October, 1883; ♂, 30th December, 1882; ♂ ♀, Lahej, 3rd April (*in coitu*); ♀, Haithalkim, 5th April, 1884.

The males are large, and therefore belong to the variety figured by Klug; the females show every gradation from the pure yellow form of Klug's figure to a form almost exactly agreeing with the male; there is also a saffron-yellow variety, and a variety of a creamy-white colour, slightly suffused with salmon in the centre and along the costa of the primaries.

23. *TERACOLUS VI*.

Teracolus vi, Swinhoe, P. Z. S. 1884, p. 437, pl. xxxix. figs. 6, 7.

♂, Aden, 6th January, 4th February, 11th April, 1884; ♀, 18th October and 8th November; ♂, 23rd October and 8th December, 1883.

24. *TERACOLUS PLEIONE*.

Pontia pleione, Klug, Symb. Phys. pl. 8. figs. 7, 8 (1829).

♀, Aden, 26th February; ♂, ♀, 27th March, 10th April; ♀, 15th April, 1884.

24 a. *TERACOLUS MIRIAM*.

Idmais miriam, Felder, Reise der Nov., Lep. ii. p. 190, n. 186, pl. 27. figs. 3, 4.

Teracolus chrysomela, Butler, Cist. Ent. p. 244 (1874).

♂, ♀, Aden, 6th January (*in coitu*); ♂, ♀, 27th March; ♂, ♀, 10th April.

The fact that these Butterflies are all caught flying together, taken in conjunction with the slight difference which separates the one from the other, seems to me to indicate that *T. miriam* is only an under-coloured variety of *T. pleione*: its sole distinction is that the

secondaries in the male have no marginal spots, and that in the female these spots are very small. Major Yerbury, however, sends the following note, which argues in favour of the existence of more than one species here; if by breeding he can prove this to be the case, I shall not be at all distressed, though certainly surprised thereby. He says:—"I fancy there are three distinct insects under these two numbers (attached to specimens indicated under *T. pleione* and var.)—*first*, the ordinary common male with the white female; *second*, the yellow females (the males I have taken *in coitu* with yellow females seem to have the orange coming down lower on the hind wing); and *third*, the males of a brighter, richer colour—these are so conspicuous that one notices them at once when on the wing. I have raised one or two caterpillars; there certainly are at least two different sorts of caterpillars to be found on plant no. 23 (*Cleome*, n. sp.?). Only *T. pleione* resulted, but, at the time when I raised these caterpillars, I only had one breeding-glass, so could not tell what turned to what."

I may note that a small male *T. acaste* "from chrysalis" was labelled with the same number as *T. pleione*. A female *T. miriam* was also taken *in coitu* with *T. pleione*, ♂.

25. TERACOLUS CÆLESTIS.

Teracolus cælestis, Swinhoe, P. Z. S. 1884, p. 435, pl. xxxix. figs. 1, 2.

♂ ♀, 6th January, ♀, 23rd January, 1884; ♂, 2nd March, 1883; ♀, 12th, and ♂ ♀, 27th March, ♂, 10th April; Labej, 6th April, 1884.

Either this species is extremely variable or it hybridizes with *T. acaste* of Klug, and thus produces intergrades to that species; in the absence of direct evidence I am inclined to think the latter to be the case. In his recent paper on *Teracolus*, Col. Swinhoe regarded the white females as albino varieties of his *T. cælestis*, and could not be persuaded to believe that they were represented by Klug's figures; yet these figures, though a little too black, are really not bad, whereas the figures of *T. pleione* are not at all like anything we have ever seen, and nevertheless Col. Swinhoe did not hesitate to agree with me that they were intended to represent the Aden species.

Between *T. cælestis*, then, and *T. acaste* we have two intergrades, both of them smaller in both sexes than *T. cælestis*. The first of these has the outer border of the primaries in both sexes broader than in *T. cælestis*, and the upper surface, especially of the secondaries in the female, of a paler sulphur-yellow: this I shall regard as a simple variety of *T. cælestis* reduced in size and colour by crossing with *T. acaste*. The second intergrade differs but little in the male sex from that last mentioned, excepting that the blackish border is narrower and tapers more towards the external angle¹; the females, however, have lost the yellow colouring (or rather, if my view be correct, have not acquired it), only the diffused pale orange

¹ I should have found it difficult to decide which were the males of this form, had they not fortunately been taken *in coitu* with the females.

nebula being present upon the primaries: this I propose to regard as a variety of *T. acaste*, modified in colouring by crossing with *T. cælestis*.

Intergrade 1 = *T. cælestis*, var.

♂, Aden, 2nd March, 1883; ♀, 10th April, 1884; ♀, 1st July, 1883.

Intergrade 2 = *T. acaste*, var.

♂ ♀, Aden, 26th February, 1884, *in coitu* (two pairs).

26. TERACOLUS ACASTE.

Pontia acaste, Klug, Symb. Phys. pl. 7. figs. 16, 17 (1829).

♂, Aden, 27th March, 10th April (from chrysalis), 1884; ♀, 3rd June and 5th September, 1883.

In Hewitson's collection two females of *T. acaste* stand under *T. halimede*, whilst *T. acaste* is represented by four females of *T. pleione* and one of *T. acaste*, *T. pleione* consisting of one typical male and three males of the variety *T. miriam*; one of the females labelled "Red Sea" corresponds more closely with Klug's figures than those in the present collection, but is evidently referable to the same species.

As *T. acaste* appears to have a wider range than *T. cælestis*, it would be at any rate premature to regard them as mere sports of one variable species.

27. TERACOLUS PROTOMEDIA.

Pontia protomedia, Klug, Symb. Phys. pl. 8. figs. 13, 14 (1829).

♂ ♀, Haithalkim, 4th and 5th April; ♀, Lahej, 6th April; ♂ ♀, Shaik Othman, 20th April and 11th May, 1884.

It is a curious thing that specimens of this species almost invariably arrive in a more or less broken condition; of the ten examples before me only two males came to hand in anything like a perfect state; possibly their brilliant colouring may render them especially attractive to birds. The species is an interesting one, since it links the *T. hewitsoni* and *T. halimede* groups.

28. TERACOLUS MILES.

Teracolus miles, Butler, Ann. & Mag. Nat. Hist. ser. 5, vol. xii. p. 105 (1883).

♂, Aden, 11th July, 1883.

The example does not perfectly agree with the type from the Victoria Nyanza, but is too close to render it safe to separate it upon a single specimen. Major Yerbury says that he has only seen two examples, "one on the 7th July and the other a few days later."

29. TERACOLUS EPIGONE.

Anthopsyche epigone, Felder, Reise der. Nov., Lep. ii. p. 186, n. 180.

♂ ♀, Haithalkim, 4th and 5th April, 1884.

30. *TERACOLUS NOUNA*.

Anthocharis nouna, Lucas, Expl. Alg., Zool. iii. p. 350, n. 14 pl. 1. fig. 2 (1849).

♂ ♀, Huswah, 30th March and 18th May; ♂, Haithalkim, 5th and 20th April, 1884.

The specimens agree tolerably closely with the figures by M. Lucas.

31. *TERACOLUS SAXEUS*.

Teracolus saxeus, Swinhoe, P. Z. S. 1884, p. 441, pl. 40. figs. 1, 2.

♂, Huswah, 14th March, 1884; ♀, 9th September, 1883; ♀, Lahej, 9th September, 1883.

Differs from the preceding in the subapical oblique orange band on the primaries below being of double the width, and in the much more pink colour of the under surface of the secondaries; the female also is destitute of the oblique brown line near the inner edge of the broader orange apical patch. It is, of course, possible that the two may be dimorphic forms of one species, but this can only be satisfactorily decided by breeding.

32. *TERACOLUS YERBURII*.

Teracolus yerburi, Swinhoe, P. Z. S. 1884, p. 441, pl. 39. fig. 12.

Haithalkim, 4th and 5th April; Shaik Othman, 11th May, 1884.

Occurs also at Lahej according to Major Yerbury. The species had evidently been some time on the wing when obtained, as only one of the six examples received was uninjured.

33. *TERACOLUS SWINHOEI*, sp. n.

♂. Allied to the preceding species, from which it differs as follows:—Wings longer, the primaries with rounded apex and external angle, upper surface sulphur-yellow instead of milky white; the black-brown apical patch of primaries more oblique, with the band of five orange spots decidedly narrower, more oblique, less angular, and with narrower blackish inner edge; secondaries with the grey basi-costal scaling continuous with the outer edge of the costal blackish spot, the apical patch unbroken; the squamose grey band, from the apical patch to the submedian vein, further from the outer margin and paler than in *T. yerburi*; the black marginal spots much larger; under surface tinted with sulphur-yellow throughout, bright sulphur-yellow over the basal half of the primaries and the external border, the subapical orange band much brighter and (as on the upper surface) narrower and more oblique. Expanse of wings 42 mm.

Haithalkim, 5th April, 1884.

"The only specimen."—*J. W. Y.*

34. *BELENOIS LORDACA*.

Pieris lordaca, Walker, Entom. v. p. 48.

♂ ♀, Huswah, 14th and 30th March; ♀, Haithalkim, 5th April, 1884.

The males are smaller than one in the Museum collection from
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Damascus, but that is probably an exceptionally large example; there is no difference between a female from Damascus and one from Huswab.

"I have raised caterpillars of this on *Capparis galeata*."—*J. W. Y.*
A caterpillar taken on the 14th March emerged on the 24th.

35. BELENOIS LEUCOGYNE, sp. n.

Allied to *B. elisa* and *B. johannæ*. Size of *B. severina*: the male above milky white: primaries as in *B. boguensis*, with narrow oblique black discocellular streak and tapering, internally zigzag, external border enclosing five spots of the ground-colour, the second largest; secondaries with a marginal series of triangular blackish spots indistinctly connected by a few dusky scales here and there: under surface most like *B. boguensis*; primaries milky white, the apical or external border brown, darker along its inner edge and enclosing six primrose-yellow spots, one being placed within the subcostal furca; secondaries primrose-yellow, with a chain-like series of four large spots of the ground-colour upon a brown ground, an abbreviated brown irregular stripe from costa to second subcostal branch. Female above sulphur-yellow; primaries with black discocellular bar and external border as in *B. boguensis* ♀; secondaries with narrow external black border and subcostal stripe; four small submarginal spots of the ground-colour; primaries below reddish brown towards apex; seven lemon-yellow spots upon the external border, otherwise as above; secondaries pearl-white, streaked and bordered with lemon-yellow, border brown; otherwise as above. Expanse of wings 55 mm.

♂, Lahej, 3rd April; ♂ ♀, Haithalkim, 4th and 5th April, 1884.

36. SYNCHLOE GLAUCONOME.

Pontia glauconome, Klug, Symb. Phys. pl. 7. figs. 18, 19 (1829).

Aden, 25th and 28th January, 1883; 5th and 12th February (from chrysalis), 1884.

"The caterpillar of this butterfly feeds in Aden on plant no. 42 (*Cleome paradoxa*), but in the interior it feeds on no. 43 (*Dipterygium glaucum*); it is generally distributed."—*J. W. Y.*

S. iranica of Bienert, from Persia and Affghanistan, is closely allied to this species; on the upper surface it differs chiefly in the larger white spots on the apical border of the primaries; on the under surface, however, it is readily separable by the absence of the green basi-abdominal patch on the secondaries, and the paler yellower tint of the other green markings on all the wings.

A discoloured chrysalis forwarded by Major Yerbury as possibly that of *Teracolus phisadia* appears to me to belong to this species; it is of the usual form and shows the wing-pattern distinctly.

37. NEPHERONIA ARABICA.

Eronia buquetii, var. *arabica*, Hopffer in Peters's Reise nach Mosambique, Zool. v. p. 363, var. β (1862).

Lahej, 3rd and 6th April; Haithalkim, 4th April, 1884.

Hopffer probably only had a female before him when he wrote his diagnosis of this form. The under surface of the secondaries and apex of primaries in the male is of a pearly greenish tint, the dusky atoms being confined almost entirely to the costal border of the secondaries; the female even is scarcely ochraceous on the under-surface; I should rather describe the secondaries as sericeous greenish yellow, sparsely reticulated with greyish squamose striæ; the usual purplish discocellular marking with white centre and creamy-white spot attached to its outer edge.

There is no doubt that the local forms named by Hopffer *E. mosambicensis*, *capensis*, and *arabica* are permanent, and should be kept separate.

HESPERIIDÆ.

38. HESPERIA ANCHISES.

Ismene anchises, Gerstaecker in Von der Decken's Reisen in Ost-Africa, iii. p. 374, n. 29, pl. xv. figs. 6, 6a (1873).

Aden, 8th July, 1884.

Also "Huswah" according to Major Yerbury.

We have *H. anchises* also from the Victoria Nyanza.

39. PARNARA MATHIAS.

Hesperia mathias, Fabricius, Ent. Syst. Suppl. p. 433 (1798); Butler, Cat. Fabr. Lep. pl. 3. fig. 6 (1870).

Aden, 3rd February, 1884, 12th June and 7th December, 1883; Huswah, 2nd March; Shaik Othman, 20th April, 1884.

Also at Lahej according to Major Yerbury.

40. GEGENES KARSANA.

Hesperia karsana, Moore, P. Z. S. 1874, p. 576, pl. 67. fig. 6.

♂, Aden, 3rd February, 1884; ♀, Shaik Othman, 1st September, 1883.

Also occurs at Huswah.

41. PYRGUS EVANIDUS (var. ADENENSIS).

Pyrgus evanidus, Butler, Ann. & Mag. Nat. Hist. ser. 5, vol. v. p. 223.

Aden, 3rd, 23rd, and 26th February, 1884, and 2nd March, 1883.

All the specimens are much darker on the under surface than those from Sind and Beloochistan, the apex of the primaries having the blackish ground-colour of the remainder of the wing, and the secondaries having the ground-colour dark greyish olivaceous instead of pale yellowish. As the Aden form may prove to be distinct (and is at any rate more worthy of a name than many of the forms recognized on the Continent), I propose to call it var. *adenensis*.

42. THANAOS DJÆLÆLÆ.

Pterygospidea djæælæ, Wallengren, Lep. Rhop. Caffr. p. 54 (1857).

Aden, 1st July, 1883.

This species appears to be common in Angola, whence most of Hewitson's specimens were obtained; we have one example from Angola and one from Abyssinia.

HETEROCERA.

In addition to the specimens received from Major Yerbury, we possess a small series presented by Col. Swinhoe, which I propose to include in this list, when in sufficiently good order for identification; as, however, this series was preserved in spirit, it is not surprising to find that some of the specimens are unrecognizable.

SPHINGIDÆ.

43. *LOPHURA NANA*.

Lophura nana, Walker, Lep. Het. viii. p. 107, n. 4 (1856).

Aden (from chrysalis), 8th April, 1884.

The remainder of the Moths are only numbered, no notes accompanying them; the type was from Natal.

44. *BASIOTHEA IDRICUS*.

Sphinx idricus, Drury, Ill. Nat. Hist. iii. p. 2, pl. 2. fig. 2 (1773).

Aden.

We have the species from Natal, Sierra Leone, and Abyssinia.

45. *CHÆROCAMPA CELERIO*.

Sphinx celerio, Linnæus, Syst. Nat. i. 2, p. 800 (1766).

Two examples, Aden.

We have this widely distributed species from Abyssinia (a locality not recorded in my Revision of the family).

46. *DEILEPHILA LIVORNICA*.

Sphinx livornica, Esper, Ausl. Schmett. ii. pp. 87, 196, pl. 8. fig. 4 (1785).

♂, Aden.

A single specimen, rather darker than Turkish examples, but evidently to be referred to the same species.

47. *DAPHNIS NERII*.

Sphinx nerii, Linnæus, Syst. Nat. i. 2, p. 798, n. 5 (1766).

♀, Aden.

A pale example, and therefore not of the African type.

48. *PROTOPARCE ORIENTALIS*.

Protoparce orientalis, Butler, Trans. Zool. Soc. 1876, vol. ix. p. 609, n. 21, pl. 91. figs. 16, 17.

♂, Aden.

One slightly rubbed specimen of this Eastern form of *P. convuli*.

LITHOSIIDÆ.

49. DEIOPEIA PULCHELLA.

Tinea pulchella, Linnæus, Syst. Nat. i. 2, p. 884, n. 349 (1766).

Three specimens, Aden.

LEUCANIIDÆ.

50. LEUCANIA EXTRANEA.

Leucania extranea, Guénée, Noct. i. p. 77, n. 104.

One bad specimen, Aden (*C. Swinhoe*).

The specimen was just good enough to permit of its being recognized.

XYLOPHASIIDÆ.

51. XYLOPHASIA OPPOSITA, var.

Mamestra opposita, Walker, Lep. Het. Suppl. ii. p. 667 (1865).

♂, Aden.

Only differs from the type-specimens (from S. India and Ceylon) in having an oblique diffused belt of scarcely perceptibly redder colour from centre of inner margin to apex of primaries.

The species of *Xylophasia* are well known to be variable in the ground-colour of the wings, and dimorphism is probably prevalent, as with *X. rurea* and var. *combusta* (which resembles a *Mamestra*). I should not be surprised if the N.-American *Mamestra dubitans* prove to be a similar dimorphic form of *Xylophasia lignicolora*.

52. PRODENIA CARADRINOIDES.

♀ *Laphygma caradrinoides*, Walker, Lep. Het. ix. p. 190, n. 8 (1856).

♂ *Prodenia ingloria*, Walker, l. c. xv. p. 1679 (1858).

♂ ♀, Aden.

The type of *L. caradrinoides* was from Natal, but that of *P. ingloria* from Moreton Bay, so that their separation as distinct species was excusable; we have received both sexes together from the Hawaiian Islands. The range of this species is therefore most extensive.

APAMIIDÆ.

53. PERIGEA INEXACTA.

Perigea inexacta, Walker, Lep. Het. Suppl. ii. p. 682 (1865).

Aden (*Swinhoe*).

The type of the species was from the Cape of Good Hope.

54. AMYNA STIGMATULA?

Erastria stigmatula, Snellen, Tijds. voor Ent. xv. pl. 4. fig. 15 (1872).

Aspect above of *A. stellata* of Japan, from which, however, it differs in the grey-edged scales of the primaries, giving it a mottled

character, the scales themselves redder, the inner whitish-edged brown line nearer the base more oblique and sinuated (not denticulated); reniform spot larger, more oblique, its inferior lobe stramineous instead of pure white; outer line more parallel to the inner, regularly dentate-sinuate, the sinuations wider than in *A. stellata*; secondaries (like the primaries) darker and redder than in the Japanese species; the thorax mottled like the primaries: on the under surface all the wings are grey, slightly paler beyond the postmedian line, which is not sharply defined and very slightly undulated, whereas in *A. stellata* the costal and apical borders of primaries and the whole surface of the secondaries on the underside are whitish, and the postmedian line on the secondaries is further from the outer margin, sharply defined, dark brown and deeply dentate-sinuate. Expanse of wings 26 mm.

♂, Aden (*Yerbury* and *Swinhoe*).

In a paper in the Proceedings of this Society for 1881 (p. 617) I recorded *Amyna cephusalis* as from Kurrachee; the specimen is a good deal worn, but certainly belongs to the present species and not to *A. cephusalis*: the latter is in fact more nearly allied to *A. stellata* than the present species is; nevertheless, in the absence of a good example of *A. stigmatula* for comparison with that received from Col. Swinhoe, it was impossible to see in what respects the latter differed from *A. cephusalis*, and therefore I concluded it to be a variety of the same. Snellen's figure is not good, but I think represents this species.

The specimen presented by Col. Swinhoe is much disguised in colouring by its immersion in spirit, but is otherwise in fair condition.

HELIOTHIDÆ.

55. HELIOTHIS ARMIGERA.

Heliothis armigera, Hübner, Noct. pl. 79. fig. 370 (1805-24).

Aden (*Swinhoe*).

ACONTIIDÆ.

56. XANTHODES INNOCENS.

Xanthodes innocens, Walker, Lep. Het. xv. p. 1752 (1858).

Aden.

ERIOPIDÆ.

57. CALLOPISTRIA YERBURI, sp. n.

Nearest to *C. exotica*: of the same general coloration and size; wings a little darker; the outer or discal stripe more slender, not lunulated, its upper portion much more strongly arched, so as to impinge upon the submarginal triangular spots, its lower portions strongly inangled; under surface greyer, more uniform in colour, without any golden reflection, the white markings obsolete. Expanse of wings 30 millim.

Aden.

EURHIPIDÆ.

58. EUTELIA DISCISTRIGA.

Eutelia discitriga (sic), Walker, Lep. Het. Suppl. iii. p. 823 (1865).

Aden (*Yerbury* and *Swinhoe*).

PLUSIIDÆ.

59. PLUSIA LIMBIRENA.

Plusia limbirena, Guénée, Noct. ii. p. 350, n. 1179.

Aden (*Swinhoe*).

Occurs also in Abyssinia.

GONOPTERIDÆ.

60. COSMOPHILA XANTHINDYMA.

Cosmophila xanthindyma, Boisduval, Faune Ent. Madag. p. 94, pl. 13. fig. 7.

Cosmophila indica, Guénée, Noct. ii. p. 396, n. 1256.

Cosmophila auragoides, Guénée, l. c. p. 397, n. 1258.

Cirrædia edentata and *variolosa*, Walker, Lep. Het. xi. p. 750 (1857).

♂ ♀, Aden.

We have this species from Madagascar, Natal, West Africa, Ceylon, and various parts of India and Australia. It is probably identical with Walker's *Cirrædia edentata* from Tasmania, but, in my opinion, does not quite agree with *Cosmophila erosa* of the New World, a constant character for separating which appears to obtain in the more deeply sinuous, more angular, and more narrowly fringed outer border of the primaries; it is also as a rule of a more lively colour, with the external half of the primaries of the male by no means so dark.

61. GONITIS SUBULIFERA.

Gonitis subulifera, Guénée, Noct. ii. p. 404, n. 1272 (1852).

Aden (*Yerbury* and *Swinhoe*).

This species was originally described from an Abyssinian example.

62. GONITIS PROPINQUA, sp. n.

Closely allied to *G. fractifera* of St. Domingo, some varieties (the greyer ones) of which it closely resembles in size, colour, and, pattern, with the following exceptions:—It is usually greyer and darker; the palpi are more slender, though not quite so long; the reniform spot on the primaries is more oblique, the black dots within it being blurred; the outer line of the central belt is much more irregular and bends more strongly outwards towards the inner margin; the inner margin of the primaries is shorter, thus equalizing the divisions from the angle of the outer margin; the sinus above the angle is also deeper. Expanse of wings 38 millim.

Aden (*Yerbury* and *Swinhoe*).

We have long had a worn example of this species from Abyssinia

and three from Natal : the latter are most like the New-World species, agreeing better in colour and in the absence of black spots on the tips of the fringe, which also is reddish as in *G. fractifera*. Possibly a long series might prove that they were distinct.

POLYDESMIDÆ.

63. PANDESMATA QUENAVADI.

Pandesmata quenavadi, Guénée, Noct. ii. p. 438, n. 1310 (1852).

Aden.

We have this species from Kurrachee and other parts of India.

OPHIDERIDÆ.

64. OPHIDERES MATERNA.

Phalæna-Noctua materna, Linnæus, Syst. Nat. ii. p. 840, n. 117.

Aden (♂ *Swinhoe*; ♀ *Ierbury*).

We have received the female of this species from Abyssinia; it is a common Indian insect.

OMMATOPHORIDÆ.

65. CYLIGRAMMA LATONA.

Phalæna-Noctua latona, Cramer, Pap. Exot. i. p. 20, pl. 13. fig. B (1779).

Aden.

We have received this species from Nyassa.

OPHIUSIDÆ.

66. SPHINGOMORPHA MONTEIRONIS.

Sphingomorpha monteironis, Butler, Ann. & Mag. Nat. Hist. ser. 4, vol. xvi. p. 406, n. 81 (1875).

♂, Aden.

We have also received this species from Abyssinia; the present specimen is a little darker than any of our examples from various parts of Africa, but corresponds with them in pattern.

67. ACHÆA CATILLA.

Achæa catilla, Guénée, Noct. iii. p. 247, n. 1667.

Aden.

We have this species from Abyssinia, Rodriguez, and Madagascar.

68. GRAMMODES STOLIDA.

Noctua stolidia, Fabricius, Sp. Ins. ii. p. 218, n. 54.

♂, Aden.

We have received *G. stolidia* from Abyssinia.

EUCLIDIIDÆ.

69. TRIGONODES ACUTATA.

Trigonodes acutata, Guénée, Noct. iii. p. 283, n. 1728.

Aden.

This species is represented in the Museum by examples from Mauritius, Rodriguez, &c.

70. TRIGONODES ANFRACTUOSA.

Ophiusa anfractuosa, Boisduval, Faune Ent. de Madag. p. 104, n. 8, pl. 15. fig. 6.

Aden.

We have received this insect from Abyssinia.

REMIGIIDÆ.

71. REMIGIA FRUGALIS.

Noctua frugalis, Fabricius, Ent. Syst. iii. 2, p. 138.

♂, Aden.

Common probably all over India and Africa; we have it from Kurrachee to Ceylon and from Sierra Leone to Madagascar.

72. REMIGIA CONVENIENS.

Remigia conveniens, Walker, Lep. Het. xiv. p. 1507, n. 19 (1857).

Aden (*Yerbury* and *Swinhoe*).

Probably abundant throughout Africa; we have it from Sierra Leone to Rodriguez.

THERMESIIDÆ.

73. MAGULABA MÆSTALIS.

♀ *Magulaba mæstalis*, Walker, Lep. Het. Suppl. iv. p. 1126 (1865).

♂, Aden.

Walker's type was from Sierra Leone; he referred it, as a new genus, to the *Platydiidæ*, but as a fact it is allied to *Helia*, *Mulelocha*, *Daxata*, and *Mareura* (genera of the *Thermesiidæ*).

HYPENIDÆ.

74. HYPENA JUSSALIS.

Hypena jussalis, Walker, Lep. Het. xvi. p. 52, n. 56 (1858).

Aden.

We have this species from the Congo and Natal.

75. HYPENA ABYSSINIALIS?

Hypena abyssinialis, Guénée, Delt. et Pyral. p. 39, n. 44.

Aden.

Excepting that I do not consider the palpi short in the species from Aden, it corresponds with Guénée's description of the Abyssinian insect.

76. HYPENA OBACERRALIS.

Hypena obacerralis, Walker, Lep. Het. xvi. p. 53, n. 58 (1858).

Xanthoptera semilutea?, Snellen, Tijds. voor Ent. 1872, pl. 5. fig. 11.

♂, Aden.

A very widely distributed species common to Asia and Africa; it appears to be abundant at Natal. Snellen's type is represented

without palpi, which would readily account for its being placed in the *Anthophilidæ*, though I fail to see any great similarity of this species to *Xanthoptera*. *H. obacerralis* varies not a little in the ground-colouring of its wings, the African specimens being usually (though not always) more luteous towards the base than those from Ceylon.

HERMINIIDÆ.

77. HYDRILLODES INSIGNIS, sp. n.

Basal three fourths of primaries black, terminated by an elbowed white stripe from costa to inner margin; a broad cream-coloured belt across the basal third; external fourth sandy-brown, with two costal apical black quadrate spots, connected with the outer one of which is a >-shaped marking on external border, and below this again three black marginal dots; fringe cream-coloured; secondaries leaden-grey. Head and thorax black; metathoracic tufts and base of abdomen shining whity-brown; second to sixth abdominal segments leaden-grey with whitish posterior edges; anal tuft sordid testaceous; under surface yellowish, the upper surface markings almost obliterated. Expanse of wings 21 millim.

Aden.

Quite distinct in colouring from any species known to me; it somewhat resembles, both in colour and the general arrangement of its markings, *Heterochroma leucographa*, Snellen, from Sumatra.

ENNYCHIIDÆ.

78. ENNYCHIA ARABICA, sp. n.

Upper surface deep purplish brown, almost black; primaries with a submarginal cream-coloured stripe, slightly widening and incurved towards the costa; a dentated jet-black marginal stripe produced by the confluence of a series of conical black spots; fringes of all the wings metallic leaden grey; palpi and collar below white; legs below, excepting the tarsi, whitish; wings nearly as above, excepting that the black dentated marginal stripe of the primaries is replaced by a slender black line, and consequently the submarginal stripe is wider. Expanse of wings 15 millim.

Aden.

Not nearly allied to any known species.

ASOPIIDÆ.

79. DESMIA AFFLICTALIS,

Desmia afflictalis, Guénée, Delt. et Pyral. p. 190, n. 125.

Aden.

Described from an Abyssinian example; also found on the western coast of Africa.

80. HYMENIA FASCIALIS.

Phalæna-Pyralis fascialis, Cramer, Pap. Exot. iv. pl. 398. fig. O (1782).

Aden.

This species seems almost cosmopolitan. I have not seen

specimens from Europe, but should not be surprised if it turned up anywhere.

MARGARODIDÆ.

81. SYNCLERA TRADUCALIS.

Synclera traducalis, Zeller, Lep. Caffr. in Vetensk. Akad. Handl. p. 54 (1852).

Aden.

The African specimens are darker and the markings somewhat more sharply defined than in the type of *S. univocalis* from Ceylon.

82. NOORDA BLITEALIS.

Noorda blitealis, Walker, Cat. Lep. Het. xix. p. 979, n. 1 (1859).

Scopula? subjectalis, Walker, l. c. Suppl. vol. iv. p. 1472 (1865).

Aden.

Walker's types were from Ceylon and the Deccan. The genus *Noorda* is allied to *Glyphodes*, but the primaries are formed more nearly as in *Maruca*.

83. PHAKELLURA INDICA.

Eudiotis indica, Saunders, Zool. ix. p. 3070 (1851).

Aden (*Ierbury* and *Swinhoe*).

A common and widely distributed Indo-African species.

84. MARGARONIA TRANSVISALIS.

Margarodes transvisalis, Guénée, Delt. et Pyral. p. 304, n. 320.

Aden.

A common Indo-African species.

BOTYDIDÆ.

85. BOTYS NITETISALIS.

Spilodes nitetisalis, Walker, Cat. Lep. Het. xviii. p. 773, n. 17 (1859).

Botys albidalis, Walker, l. c. Suppl. iv. p. 1411 (1865).

Aden.

The types, from the Congo and India, are somewhat worn but perfectly recognizable.

86. EBULEA CATALAUNALIS.

Botys catalaunalis, Duponchel, Lép. viii. p. 330, pl. 232. fig. 8.

Botys venosalis, Walker, Lep. Het. Suppl. iv. p. 1401 (1865).

Aden.

We have this species from Europe, Asia, and Africa.

87. MECYNA DEPRIVALIS.

Mecyna deprivalis, Walker, Cat. Lep. Het. xix. p. 806, n. 7 (1859).

Aden.

Described from a Ceylonese example.